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What is claimed is:

1. Vesicles comprising membranes formed from amphiphilic copolymers having hydrophobic and hydrophilic segments.
2. The vesicles of claim 1, wherein the copolymers are ABA copolymers, wherein one of A and B is hydrophobic and the other is hydrophilic.
3. Nanocapsules formed by stabilization of the vesicles of claim 1.
4. The nanocapsules of claim 3, wherein the copolymers are stabilized by end group polymerization.
5. The nanocapsules of claim 4, wherein the nanocapsules are stabilized via crosslinking.
6. The vesicles of claim 1, wherein the copolymers are AB copolymers, wherein one of A and B is hydrophobic and the other is hydrophilic.
7. Nanocapsules formed by stabilization of the vesicles of claim 6.
8. The nanocapsules of claim 6, wherein the copolymers are stabilized by end group polymerization.
9. The nanocapsules of claim 8, wherein the nanocapsules are stabilized via crosslinking.
10. The vesicles of claim 1, wherein an active agent is encapsulated within the vesicle.
11. The nanocapsules of claim 3, wherein an active agent is encapsulated within the vesicle.
12. The vesicles of claim 2, wherein the vesicles comprise a hydrophilic inner layer, a hydrophobic middle layer and a hydrophilic outer layer.
13. The vesicles of claim 2, wherein the vesicles comprise a hydrophobic inner layer, a hydrophilic middle layer and a hydrophobic outer layer.

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14. The vesicles of claim 2, wherein the copolymers are U-shaped and the vesicles have a hydrophobic inner layer and a hydrophilic outer layer, or a hydrophilic inner layer and a hydrophobic outer layer.

15. The vesicles of claim 5, wherein the vesicles have a hydrophobic inner layer and a hydrophilic outer layer, or a hydrophilic inner layer and a hydrophobic outer layer.

16. The nanocapsules of claim 4, wherein the polymerization is via photopolymerization.

17. The vesicles of claim 1, wherein a molecule is incorporated into the vesicle membrane.

18. The nanocapsules of claim 3, wherein the hollow morphology of the nanocapsules is preserved when the nanocapsules are dry.

19. The vesicles of claim 1, wherein the vesicles are biodegradable.

20. The nanocapsules of claim 3, wherein the nanocapsules are biodegradable.

21. A method of making a nanocapsule, comprising: forming a vesicle from an amphiphilic copolymer; and stabilizing the copolymer.

22. The method of claim 21, wherein the vesicles are stabilized by end group polymerizing the copolymers.

23. The method of claim 21, wherein the vesicles are stabilized by crosslinking the copolymers to each other.

24. The method of claim 21, wherein the amphiphilic copolymers comprise an ABA copolymer, where one of A is hydrophilic and the other is hydrophobic.

25. The method of claim 21, wherein the copolymers comprise polymerizable end groups and the vesicles are stabilized by polymerizing the end groups.

26. The method of claim 25, wherein the step of stabilization further comprises crosslinking the copolymers internally.

27. The vesicles of claim 1 further comprising targeting molecules bound to the surface of the vesicles.

28. The vesicles of claim 27 wherein the targeting molecules are selected from the group consisting of carbohydrates, proteins, folic acid, peptides, peptoids, and antibodies.

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